I. INTRODUCTION

- A. The purpose of the Nebraska State Hazard Mitigation Plan is to provide a comprehensive set of guidelines for hazard response in the state. This plan identifies potential risks with appropriate mitigation responses to significantly reduce loss of life, injuries, economic costs, and destruction of natural and cultural resources.
- B. In October 2000, the Disaster Mitigation Act of 2000 passed and placed states under new mitigation planning requirements. The law provides that states shall have an approved comprehensive mitigation plan adopted following the guidelines of the Act, by November 2004. This plan ensures that the state of Nebraska is qualified to receive disaster assistance available through the Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended.
- C. The state will comply with all applicable federal statutes and regulations during the periods for which it receives grant funding, in compliance with 44 CFR 13.11(c), and will amend its plans whenever necessary to reflect changes in state or federal laws and statues as required in 44 CFR 13.11 (d).
- D. The Nebraska Emergency Management Agency (NEMA) leads the overall mitigation planning for the state of Nebraska, other state organizations, such as the Nebraska Department of Natural Resources, have created mitigation plans for specific hazards, for example flooding. Nebraska began mitigation planning in 1985 and since then has revised and rewritten mitigation plans every few years to maintain the currency of the plan.
- E. Upon FEMA approval and formal adoption, this mitigation plan will be posted on NEMA's website for easy access by the public and local emergency response agencies.

II. PLANNING PROCESS

- A. NEMA was designated to prepare the Nebraska Hazard Mitigation Plan for submission to the Federal Emergency Management Agency (FEMA). This plan is a continuation of the previous Nebraska mitigation plans with many new aspects included for the achievement of better hazard mitigation planning. The first State Mitigation Plan was written in 1985 then updated nine times until the most recent edition in 2002.
- B. Intensive research by many people contributed to the drafting of this plan. NEMA contracted Marshall's Consulting of Hastings, Nebraska, to organize this research and prepare the initial draft of the State Hazard Mitigation Plan. This plan was revised in July and August of 2004 and presented to FEMA for the November 2004 approval deadline.

- C. Other agencies have written mitigation plans. The pertinent information from those plans are included in this plan. The Nebraska Climate Assessment and Response Committee wrote the drought mitigation plan in 1999. In 2002, the Department of Natural Resources wrote and FEMA approved the State of Nebraska Flood Mitigation Plan, which will be referred to in other sections of this plan and is included as Attachment 1. The following state agencies played key roles in the development of this hazard mitigation plan:
 - 1. Department of Agriculture
 - 2. Nebraska State Patrol
 - 3. Department of Economic Development
 - 4. Department of Environmental Quality
 - 5. Department of Labor
 - 6. Department of Natural Resources
 - 7. Department of Social Services
 - 8. Game and Parks Commission
 - 9. Department of Insurance
 - 10. Natural Resources Commission
 - 11. Nebraska Historical Society
 - 12. Nebraska Policy Research
 - 13. Department of Health and Human Services
 - 14. Nebraska of Energy
 - 15. Nebraska Climate Assessment Response Committee
- D. Nebraska's ninety-three counties, several federal agencies, and interest groups also played a critical role in the development of a comprehensive mitigation plan for the state. The Federal Emergency Management Agency and the National Weather Service in particular contributed to the formation of this document along with the Nebraska organizations of Public Power Districts and Natural Resources Districts.

III. PLANNING PROJECTS

- A. Two particularly important projects took place to begin the planning phase of this plan. The first was the November 20, 2002, meeting at which eight state and two federal organizations met to discuss hazards facing the State of Nebraska and appropriate mitigation actions for those hazards.
- B. The other project was the identification of state critical infrastructure. This project involved intense cooperation between NEMA, county emergency managers, and many state agencies. The results of this project provided the information so mitigation projects can be done to protect critical infrastructure in high-risk areas of the state.
- C. This Hazard Mitigation Plan is part of an overall planning process that is on-going in the State of Nebraska.

IV. INTEGRATION OF OTHER PLANNING EFFORTS AND LOCAL PLANNING

- A. Several agencies already have mitigation plans for specific disasters in the state. The Department of Natural Resources created the State Flood Mitigation Plan in 2002 and the Climate Assessment Response Committee wrote the latest draft of the State Drought Mitigation Plan in 1999. These plans are incorporated in this all-inclusive state plan.
- B. The Natural Resources Districts will be the lead entities for the development of the local plans. Nebraska law empowers the NRDs to act as agent of the US, any of its agencies, the state, or any of its agencies in connection with any project within its boundaries. Because of this power, combined with the NRDs experience in mitigation projects, especially flooding, they became the ideal candidates to write local mitigation plans. Counties and other municipalities can aid in this process, yet the responsibility will remain on the Natural Resources Districts. Many of the Public Power Districts will also be drafting multi-hazard mitigation plans.

V. RISK ASSESSMENT

A. Planning

- 1. During the November 20, 2002, meeting, the attendees identified ten hazards for the state. After identifying these hazards, the attendees brainstormed various possible mitigation actions to respond to each individual disaster. Of the ten identified disasters, nine are addressed in this risk assessment. Chemical spills/contamination was not considered as a significant threat to infrastructure and is not included in this plan.
- 2. There are certain limitations within the risk assessment included in this plan. By investigating occurrences of past disasters and considering locations of critical infrastructure, certain locations can be determined to be at high risk. Although specific locations of critical infrastructure inside the state cannot be disclosed, State critical infrastructure has been identified and is included in the general lists of State facilities.

B. Hazards

1. Agricultural

a. Agricultural disease outbreak threatens the huge farming industry in the state. A major contamination event or outbreak of disease could create environmental and public health hazards to the human population in Nebraska including exposure to hazardous materials and contaminated water supplies, crops, livestock, and food products. Since agriculture is such a large part of the

- Nebraskan economy, an outbreak would seriously effect the Nebraskan economy.
- b. 95% of the land in Nebraska is devoted to some kind of agricultural pursuit. Because of this, pinpointing specific high-risk areas becomes difficult. However the counties that would be more vulnerable to artificially induced animal disease because of the number of production facilities are:
 - 1) Cherry
 - 2) Custer
 - 3) Dawson
 - 4) Holt
 - 5) Cuming
 - 6) Lincoln
- c. There are no state facilities that would be directly affected by an agricultural disease outbreak however, the state would feel a heavy economic downturn.

2. Drought

- a. Drought affects the crops and livestock in the State of Nebraska along with water supplies for communities. The western and central portions of the state have experienced drops in annual precipitation in the past few years and have since felt the affects of drought. By a decrease in annual rainfall for several consecutive years, water supplies have been significantly depleted, causing the effects of continued drought to be felt even more. Drought also increases the possibility of wildfires by drying out vegetation.
- b. There are no specific state facilities that are directly affected by drought, but as with agriculture hazards, drought seriously affects the economy.

3. Earthquake

- a. Nebraska experiences several small earthquakes every few years. Even though the risk for a large scale earthquake remains small, the possibility of damage to buildings from smaller earthquakes exists.
- b. There are several geographic areas in the state with lengthy fault lines that could easily cause earthquakes. The most concentrated area is in the southeast portion of the state in the Humboldt Fault Zone and Forest City Basin. Several counties in this area are increasing considerably in population and have many state facilities that could receive damage. The state facility value in this area equals about \$122 million. The following counties are at the greatest risk for damages:
 - 1) Johnson

- 2) Otoe
- 3) Nemaha
- 4) Richardson
- 5) Pawnee
- c. Of these counties, Otoe, Nemaha, and Richardson Counties have the highest vulnerability due to the existence of the number of State facilities. In these three counties there are a total of 58 State facilities.

4. Flooding

- a. Flooding has caused most of the Federal Disaster Declarations in Nebraska. The eastern portion of the state historically experiences the majority of the floods in the state, yet other rivers and lake have flooded from time to time. The most common cause of flooding is extensive rainfall during a short time period. Ice jams and dam failures are also possible causes of flooding.
- b. The following counties have the greatest vulnerability to flooding because of location and high population growth. Population growth affects flooding potential due to the expansion of human habitation into flood zones and increased number of facilities vulnerable to flood damage.
 - 1) Sarpy
 - 2) Lancaster
 - 3) Colfax
 - 4) Cass
 - 5) Washington
 - 6) Douglas
- c. Across the state, there are approximately 1,324 state facilities known to be in flood plains. The 3,500 bridges in Nebraska also hold great risk for flood damage.

5. Severe Winter Storms

- a. Severe winter storms bring ice, sleet, harsh winds, and massive amounts of snow to the state every year. An average of 32.8 winter storm events and two fatalities occur each winter.
- b. The entire state of Nebraska is vulnerable to winter storms, yet the nature of the vulnerability varies greatly. In populated areas, travel difficulties along with some power outages are significant. In rural areas, wind driven snows hamper opening of roadways along with power outages lasting from several hours to several days. In the western parts of the state, communities and farmsteads are spread out over vast distances therefore complicating emergency response.

c. Since the entire state is vulnerable to winter storms, all state facilities are as likely as others are to suffer damages.

6. Terrorism

- a. Following the attacks of September 11, 2001, the man-made hazard of terrorism became a true threat to the American people. In Nebraska, the possibility exists for both international and domestic terrorist activity.
- b. The larger metropolitan areas of Nebraska have the highest vulnerability to terrorist attacks. These areas encompass the Omaha Metro area and the Lincoln area and include the counties of Douglas, Sarpy, and Lancaster. However, there are other noteworthy targets in Nebraska because of their importance in the fields of economics, transportation, communications, agriculture, and food production.
- c. In these three counties, there are 216 critical infrastructure facilities among many more state facilities.

7. Thunderstorms

- a. Like severe winter storms, thunderstorms occur in Nebraska on a regular basis during the spring and early summer months. Severe thunderstorms can produce gust front straight line winds in excess of 60 mph, heavy rain, hail up to the size of baseballs, micro-bursts, severe lightening, and, in extreme cases, tornadoes. During a two-year study in 2000-2001, there were 573 thunderstorm and high wind events in the state. There was significant property and crop damage during this time period totaling \$51.2 million.
- b. The entire state is vulnerable to thunderstorms, yet certain portions of the state are more vulnerable to specific effects of thunderstorms. For example, thunderstorms can result in flooding, making those counties identified as vulnerable to flooding also vulnerable to thunderstorms. The same principle applies to tornadoes.
- c. Since the whole state is vulnerable, all state facilities are as likely as others are to suffer thunderstorm damage.

8. Tornado

a. Each year, there are on average 60 reported tornadoes in the state, making Nebraska 5th in the nation for tornado frequency. These tornadoes result in the average of one fatality each year, 23 injuries, and \$14.1 million in damages.

- b. Total number of tornadoes and tornado density (area/number) can be used to calculate tornado vulnerability. The following counties exhibit the highest numbers of both tornado number and tornado density:
 - 1) Hall
 - 2) Hamilton
 - 3) Buffalo
 - 4) Adams
 - 5) Thayer
 - 6) Scottsbluff
- c. There are many state facilities and 291 critical facilities in these six counties.

9. Wildfires

- a. Wildfires occur the most regularly in the central and western portions of the state of Nebraska. These portions are most susceptible to wildfire because of the dry nature of the terrain and vegetation. Wildfires are responsible for extensive damage to crops and the environment and occasionally residential or business facilities. In 1998-2004, almost 8,000 wildfires (though many mild and easily controlled by local fire departments) caused nearly 600,000 acres of fire damage.
- b. Wildfire vulnerability depends on the weather and vegetation conditions. Wildfires start easily during hot months with low humidity and dry vegetation. The National Weather Service monitors the vegetation in Nebraska for the identification of high wildfire risk. Based on past vegetation studies, the most vulnerable areas of the state are the western panhandle and central areas.

VI. MITIGATION STRATEGY

A. Mitigation Goals and Objectives

The Nebraska Hazard Mitigation Taskforce plans the mitigation initiatives for the state. The Nebraska Department of Natural Resources and the Nebraska Emergency Management Agency share leadership of this taskforce and oversee mitigation projects undertaken by local governments and other state agencies. During the planning of this project, the Taskforce outlined three goals to guide mitigation actions.

- 1. Reduce or eliminate long term risk to human life
- 2. Reduce or eliminate long term risk to property/environment
- 3. Promote public awareness of hazards and response

VII. STATE AND LOCAL CAPABILITIES

Many state and federal agencies across the state are responsible for aiding in mitigation efforts. These agencies undertake various mitigation projects across the State. Some organizations receive funding from sources other than FEMA. Some but not all are:

A. State

- 1. Nebraska Department of Economic Development
- 2. Nebraska Game and Parks Commission
- 3. Nebraska Department of Roads
- 4. Department of Natural Resources
- 5. State Forestry

B. Federal:

- 1. Corps of Engineers
- 2. Housing and Urban Development
- 3. Federal Emergency Management Agency
- 4. USDA- Rural Development
- C. Local governments can and have undertaken mitigation activities from those completed through Project Impact to planning projects completed through the Flood Mitigation Act and through HMGP following a Federally declared disaster. These projects have proved to be very beneficial to these jurisdictions. Particularly beneficial have been the projects completed by Public Power Districts to harden structures and the projects completed by the Natural Resource Districts and some municipalities to remove structures from flood prone areas.

VIII. EVALUATION OF STATE LAWS, REGULATIONS, AND STATUTES

- A. The Governor's Policy Research Office is given responsibility to evaluate state laws, regulations, and statutes in state law 84-135 (9). As Code Agencies, the agencies involved in mitigation actions cannot express their evaluations of laws, regulations, or statutes except through this office. However, the existence of certain laws addressing mitigation actions can be discussed.
- B. In the Nebraska Emergency Management Act 81-829.43 (3) & (4) there is a specific process for identifying and undertaking change in mitigation processes.

IX. COORDINATION OF LOCAL PLANNING

- A. The state offers extensive technical support to local agencies through a variety of venues. The funding the state has to support local planning is usually pass-through money from either the Hazard Mitigation Grant Program or the Pre-Disaster Hazard Mitigation Programs. The State Hazard Mitigation Officer at the NEMA office oversees both these funding programs and coordinates state mitigation planning.
- B. The three most active entities for hazard mitigation in Nebraska are the Natural Resources Districts, Public Power Districts, and the local jurisdictions. The Natural Resources Districts will be the vehicles for the creation of local hazard mitigation plans. Local plans will be linked to the State Plan in Attachment 4. This attachment will identify those jurisdictions with a completed plan and the top priority projects they have identified in their planning process.
- C. State Hazard Mitigation Taskforce will choose projects based on completeness, cost/benefit ratio, if the projects reflect the State's goals, and the eligibility of the project and jurisdiction.

X. PLAN MAINTENANCE

- A. The Nebraska State Hazard Mitigation Plan is a living document and will be rewritten by state officials every three years.
- B. The State Hazard Mitigation Officer will monitor state laws, regulations, and statutes that guide hazard mitigation. The SHMO will also monitor mitigation projects across the state funded with both per and post disaster mitigation programs.

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